

## Comments on MM Docket No. 94-130

Ted Miller  
1100 North Summit Avenue  
Sioux Falls, South Dakota 57104

January 13, 1995

Office of the Secretary  
Federal Communications Commission  
Washington, DC 20554

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Dear Secretary:

Enclosed find nine copies of my comments on MM Docket No. 94-130 for distribution to the usual destinations.

Sincerely

*Theodore C. Miller*

Theodore C. Miller

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Dear Sirs:

### **Interest of commentator.**

1. For the past 17 years I have been employed in the radio broadcasting as a Chief Engineer/Chief Operator. As such, a primary responsibility has been compliance with the FCC Rules and Regulations. My employment has included extensive work with directional antenna systems, and also extensive work with long-distance remote control. The views expressed here are my personal views and do not necessarily reflect the views of my employer.

### **Comment on overall direction of proposed rule making.**

2. I support the overall direction of the proposed rule making. Several years of experience with computerized remote control (complying with current Rules) has shown that a computerized system is much more capable of detecting and reacting to out of tolerance operation than is even a highly motivated operator. The system with which I have experience monitors transmitter readings at intervals of less than one minute. The operators generally did so at two hour intervals. Obviously, any changes in operating parameters are detected much more quickly by the computerized system. The computerized system is also much more diligent about comparing all readings against limits.

### **Concerns raised by the proposed rules.**

3. The reason I am preparing these comments is because certain proposed changes in the rules concern me. These changes are not the ones directly related to the elimination of operators, but those changes that will affect all stations, including those who choose to retain duty operators. While the NPRM has characterized these changes as making "them more relevant to unattended operation and to be responsive to commonly asked questions concerning their interpretation" <sup>NPRM</sup> Paragraph #1 some of the proposed changes go well beyond the objectives outlined in that statement. These changes would force acquisition of new equipment and considerable additional regulatory paperwork on stations that I work with. Details of what Rules would impose what burdens on stations are outlined in detail below.

### **Additional requirements imposed on all stations.**

4. Proposed changes to 73.1580(b) impose a new, broad, and undefined record keeping burden on licensees: "The Commission may require the licensee to produce a record of transmitting system measurement, adjustment and preventive maintenance procedures and schedules." This appears to reinstate the old maintenance log requirements (which were deleted some years ago) and a whole lot more. Under current FCC rules, it is up to the licensee's discretion what records are kept, in what form, and what the licensee chooses to do with those records. While the licensee may choose to disclose those records to the FCC in order to defend itself from allegations of misconduct, the FCC has no authority, in the Rules, to demand that a licensee disclose that information.

5. As written, the rule proposed in 73.1580(b) seems to be a prime candidate for a court ruling that it is "overly broad". It could be construed that the FCC could ask for records of when tape heads were cleaned, or any of a myriad of other activities that have never before been subject to FCC scrutiny. The broadness of the rule could easily allow it to be used to harass a licensee by demanding records about everything under the sun, or allow an FCC inspector to go on a "fishing expedition", looking for anything and everything that might reflect badly on a licensee. At the same time there is no way for a licensee to know what records the FCC might request, so there is no way to ever know if he will be able to comply when he is "required to produce a record of ..."

6. A proposed change in 73.1350(c)(2) needs to be more fully discussed. It appears that it may substantially reduce the real-world operating tolerance of all parameters of any remote controlled station, while masquerading as something else. In looking at overpower operation, it appears to have almost cut the tolerance in half. Under current rules, an AM or FM transmitter is assumed to be operating at correct power as long as indicated power is less than 105% of authorized power, whether that power is indicated on a local meter or a remote meter. Under the proposed rule, it would be legal at 105% on the local meter, but only legal to 103% on the remote meter, because an allowance of 2% would have to be made for the calibration error. The situation is actually more severe than that. For an AM station, power is determined by a base or common point meter. Since the current must be squared to determine the power, the error must be squared as well. The 2% error now becomes slightly more than 4%. That means that instead of having an allowable range of 90-105%, we now have a legal range of only 94-101%. Reducing allowable deviation of a reading by almost half while calling it "making it more relevant"<sup>Par.#1</sup> seems like a way to try and slip a new restriction in without letting it see the sunshine of full debate.

### **Additional requirements imposed on all AM directional stations - forced equipment purchase.**

7. Changes to 73.62(b)(2) will require every AM directional station to acquire two way radio capability. This is because of the requirement that operation be modified or discontinued within three minutes of finding that any monitor point exceeds its specified limit. As noted in Paragraph #31 of the NPRM, "the monitoring points for directional AM arrays are often located miles from the transmitter site and scattered in various directions and over different terrain".

The very nature of monitoring points means that the person measuring them is not in control of the transmitter. The only possible way to comply with the proposed rule is to use two-way radio communication of some type (one possibility is cellular telephone). In my present employment I do not have, nor do I have access to, such equipment. The effect of this rule, as proposed, will be to force my station to go out and purchase some form of two way radio capability. This will be true, whether or not we choose to take advantage of the proposed changes in duty operator requirements. A more reasonable approach would be to allow time to take a full set of monitoring points and drive back to the station. I propose rewriting 73.62(b)(2) so that it reads:

(2) In the event that any monitoring point exceeds its specified limit, the licensee must either terminate operation within ~~3 minutes~~ 2 hours or reduce power in accordance with the applicable provisions of 73.1350(d) in order to eliminate any possibility of interference or excessive radiation in any direction.

(A similar change would be required in 73.158(c)). This does not seem to be too great of an time allowance, particularly in view of the wording of 73.62(b)(4), which allows 24 hours for completion of these measurements. The two hour limit is proposed because it should be sufficient to allow a set of monitoring points to be read, plus time for the technician to return to the station (or drive to a telephone and issue instructions to the operator) to reduce power or cease operation.

**Additional requirements imposed on all AM directional stations - Additional paperwork, reporting, and filing expense.**

8. Changes to 73.62(b) impose a new burden on licensees of AM directional stations. Specifically this relates to the removal of the allowance for 10 days of operation with operating parameters outside of tolerance in the presence of inclement weather. Apparently the FCC is not aware of how often operation continues under this provision. Most weather related problems are indeed resolved within 10 days, and operation continues without notification to the FCC. Since an STA requires a filing fee, it must be sent to Philadelphia and processed there before being forwarded to the FCC offices. By the time the paperwork arrives at the Mass Media Bureau, the weather situation will probably have passed, and the directional antenna will again be operating within licensed parameters. However, that will not stop the STA process. A file number will have to be assigned, someone will have to examine the merits of the request, and a telegram sent, authorizing the STA operation. The station will then have to respond to the FCC, stating that normal operation has resumed (when normal operation has actually been happening since before the STA was issued). The amount of paperwork generated by this, as well as the amount of man-hours consumed both at the licensee and at the FCC, and the amount of money in filing fees that the licensee will be required to bear, all make this seem to be a very poorly thought out change. My past experience with a (critical) directional antenna system would tell me that, by the time all the processing delays have passed, many times that antenna system would spend more time on STA than off of one. In many cases the time from filing an STA application until the time when the FCC would close out that STA would exceed the time interval between occasions when weather changes caused one or more directional antenna readings to be outside of tolerance.

9. If the FCC desires to be able to track how often directional antenna operation occurs outside of authorized tolerance, I propose that the old 10 day weather allowance be retained, with the addition of a notification requirement. Notification to the FCC (in Washington or to the Engineer In Charge of the District) would be required within 24 hours. In cases where the condition was not corrected within 10 days, then the STA would be required. Simple notification would allow the FCC to compile a record of operation outside authorized tolerance, but would not require a response from the FCC, plus a response from the licensee, plus another response from the FCC.

**Proposed addition to cover a circumstance not addressed in NPRM.**

10. In regard to the circumstances addressed in 73.62(b), I would propose an additional option for use under very restricted circumstances. The circumstances in question are weather circumstances which satisfy two conditions:

A. Weather conditions result in directional antenna operating parameters outside of tolerances, and at the same time

B. Weather conditions which make it unsafe to take monitoring point measurements without undue risk to the life of the technician.

I have encountered those circumstances here in the northern states, so I will give an example from my experience. (I feel certain that other circumstances in other parts of the country would meet the two qualifications with different details, as in a hurricane.) The specific circumstances I have encountered have been when a winter storm begins with freezing rain, and then continues with heavy snow and blizzard conditions. In this case the freezing rain coated the directional antenna towers with ice. The ice buildup changes the effective diameter of the towers. This changes the self-impedance of the towers. The change in self impedance of the towers causes changes in operating parameters. In these circumstances, it is impossible to take monitoring point readings within 24 hours without endangering the human life, as travel to the various monitoring point locations is dangerous, if not impossible.

11. In conditions which meet the narrow criteria outlined in the previous paragraph, I propose allowing operation at 25% of authorized power until measurements can be safely undertaken. I propose the 25% level, because that is the level at which non-directional operation is routinely authorized by STAs issued during construction activities at directional stations. Since even large deviations outside of authorized operating parameter limits will still result in a pattern of the same general shape as the authorized pattern, operation at 25% power would still afford other stations more protection than non-directional operation at 25% power.

**Proposed clarification to AM directional antenna rules.**

12. I proposed that a clarification be added to 73.62(b)(1) making clear that changes in directional antenna readings do not require reading of monitoring points more often than once every 24 hours. When buildup of tower ice occurs during freezing rain, and the later as the ice melts, it is not uncommon for readings to vary considerably from hour to hour. Since 24 hours is allowed from the initial problem until monitoring points are read, it seems logical to me that once measurements showing legal operation under the provisions of 73.62(b) have been taken, those readings would allow continued operation for 24 before additional readings are required.

The reason I bring up the issue is that I recently encountered a situation with freezing rain. The ice on the towers built up over a period of about 24 hours, Due to temperatures which remained just below freezing, it took about 6 days for the ice to melt off the towers. During this entire time (total about one week) the directional antenna monitor readings changed from hour to hour. A clarification of how 73.62(b)(1) "Subsequent variations in operating parameters will require the remeasuring and logging of every monitoring point to assure that the authorized monitoring point limits are not being exceeded." would apply to this situation seems in order. How much "subsequent variations" is enough to trigger this provision? How often can this provision be triggered (I am proposing once every 24 hours.)

#### **Responses to specific solicitation of comments in the NPRM.**

13. In response to the questions raised in Paragraph 12 "Can these types of station changes be fully automated, or do they require human verification?" I respond that they can be verified, and probably better and more reliably by a computer than by a human. Any change in power level is immediately reflected in the base current or common point current. Any failure to change would result in an out of tolerance alarm, and whatever reaction is appropriate to that alarm condition. The same is true to directional pattern changes. A reading of the directional parameters will quickly determine which pattern is in operation at any given time. If the question being raised is in regard to the reliability of computerized clocks, I have found them to be much more reliable than humans watching clocks on the wall. I cannot count the number of times the computerized backup system I installed has changed pattern because the human who was in charge of the transmitter forgot.

14. In response to the questions raised in Paragraph 15 dealing with tower lights: As suggested, continuous monitoring of the lights by an automated system will notice lights out much more quickly than an employee who checks on them once per day. Under current rules, a person must be present in order to perform the tower light check. It is therefore obvious that the same person is available to immediately notify the FAA of any outage. When there is no duty operator, and the automatic equipment must notify someone off-site of an outage, there is a time delay introduced. Since no other function requires an IMMEDIATE response (automatic equipment can shut the station down if no corrective action is taken), the handling of the issue of tower lights (along with EBS) will determine what kind of "off-duty operator" arrangements are required for many stations. It would seem reasonable to allow for a time delay between when the outage is noted by the automated equipment, and when the FAA is notified. A permissible delay of an hour or two would seem reasonable, in light of the possible 23 hours plus delay that may occur if a light is extinguished immediately following a daily inspection. The best solution would be if the FAA would make available a computer-based reporting system, which would allow a remote control system to make a phone call to the FAA and transfer information on the outage to the FAA via modem. Another alternative would be for the FAA to have FAX machines at their flight service centers. A remote control could be programmed to generate a FAX message to the FAA giving information on tower location and type of outage.

15. In response to Paragraph 16 dealing with the EBS system, it appears that the EAS system is the best solution. Since someone must ultimately be available to take care of tower lighting

problems, perhaps that same person would be charged with EBS responsibilities until the EAS system is implemented fully.

16. In Paragraph 17 "We seek comment on whether this proposal will promote the rapid implementation of the new Emergency Alert System." I don't think it would necessarily do so. The system cannot be fully implemented until all stations in the EBS Operational Area are involved. There is only so much that any given broadcaster can do to persuade another competing broadcaster to spend the time and money required to implement EAS. Since the Primary Control station has to have an operator to start the system, he will have little motivation to install a system so that a competing station can save money by sending its operators home. Requiring EAS would tend to slow down implementation of unattended operation rather than it would speed up EAS implementation schedules.

17. In Paragraph 27 you request "suggestions of other specific parameters that can be occasionally out-of-tolerance and not readily adjusted to proper operation but with no risk of interference." To the ones I saw listed, I would suggest adding moderately out-of-tolerance pilot and subcarrier injection levels, as long as total modulation is not excessive.

18. In paragraph 29 I see a potential problem. The issue is "whether the three minute time limit affords adequate opportunity for remedial action." At the two extremes, it would appear to be plenty of time, but I foresee an unintended problem in the "middle ground". If the system is entirely automated, with a computerized system issuing commands to correct any problem, three minutes should be sufficient. At the other extreme, if a duty operator is manually recording readings, he would presumably choose a time to take the readings when he would be able to make any needed corrections. The problem I foresee is that a highly advantageous equipment configuration may be untenable. That configuration is using automated logging and monitoring of transmission parameters, but having a duty operator who is responsible for taking corrective actions. This equipment configuration could be set up so that it has the advantage of continuous, unblinking monitoring of parameters, without requiring all the control connections and computer programming required to correctly react to correct any problems. The catch is this: the duty operator can no longer choose when to discover that there is a problem, so his other duties may keep him from responding within 3 minutes. For example, the duty operator is often also the DJ. What happens if he has just begun a 10 minute local newscast (all 10 minutes he has to be live and on the air) when a sudden increase in line voltage suddenly pushes the transmitter 2% above the authorized power limit, setting off the alarm? He is now faced with the choice of:

A: Don't finish the newscast, lose all the station's news advertising revenue, and turn his attention to adjusting the power.

B. Run the transmitter for three more minutes, then turn it off, again resulting in loss of revenue to the station.

C. Operate for 10 minutes with power 2% above the limit, adjusting the transmitter as soon as his newscast is over. This option would not result in any lost revenue, would not cause any measurable interference to anyone, but would result in a technical 7 minute violation of the proposed rule.

When management finds out they are facing these choices, they will do one of two things:

A. Tell the operator to use option C, and take their chances with the FCC.

B. Discontinue use of the automatic alarm system, and return to manual logging of parameters.

Under either option, the out-of-parameters condition will continue for much longer than 3 minutes. Option B is the legal option, but it will also result in parameters out of limits for the longest time, as it may be a couple of hours until the overpower condition is detected. What I am attempting to show is that making the limit shorter may not result in less operation outside of parameters. It may force people back to older ways, which will actually increase the amount of time of out-of-tolerance operation. I believe that 10 minutes of operation without correcting a problem would be a better time limit.

## **Conclusion**

19. I have serious concerns about the proposed rule changes. While offering something advantageous to stations which choose to operate without operators, this proposed rule making takes away from everyone in many ways. All of the proposals that will affect stations who maintain duty operators will be to their detriment, with the exception of a very few things, like not requiring the restricted permit. There are many, many technical requirements which are added or made more restrictive. These deserve much more scrutiny than would be given, based on the supposed content of this rule making. Many of them seem much more onerous than is truly necessary, or than is currently mandated by Rule or common practice. There seem to be a great many new requirements imposed particularly on licensees with AM directional antennas. I hope to see a revised, more reasonable set of technical requirements put out for comment before the final Report and Order is issued.